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**Perceived Value in Payment Modes:
Cognitive and Affective Value among Brazilian Consumers**

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A Project carried out on the Master in Management Program, under the supervision of Professors Luis Martinez from NOVA – School of Business and Economics, and Carla Ramos from INSPER – Instituto de Ensino e Pesquisa.

June 28th, 2018

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RESUMO

Consumidores têm certas percepções em relação a diferentes meios de pagamento, como dinheiro, cartão de crédito ou de débito, ou pagamentos digitais. Essas percepções influenciam nos seus gastos e no seu comportamento de compra, e cada vez mais atenção vem sendo dedicada a esse fenômeno. Apesar da extensa literatura a respeito da subjetividade referente aos meios de pagamento e seus impactos no processo de tomada de decisão do consumidor, algumas contradições são evidenciadas em estudos passados. Além do que, existe uma lacuna no sentido de não existir uma escala que avalie a percepção dos consumidores em relação aos meios de pagamento. Este estudo foca no conceito de percepção do consumidor relativamente aos meios de pagamento, baseando-se na literatura de marketing referente a meio de pagamentos e em dois modelos teóricos bem aceitos – Paradigma Comportamental Cognitivo-Afetivo e Teoria do Valor de Consumo – para sugerir três hipóteses relacionadas ao valor cognitivo e afetivo percebido pelos consumidores. Para isso, nós nos concentramos nos meios de pagamentos considerados como o “mais tradicional” e o “mais inovador”, como por exemplo, dinheiro e pagamentos digitais. Este estudo tem dois objetivos: primeiro, desenvolver uma escala para medir o valor percebido pelos consumidores em relação aos meios de pagamentos e, segundo, mostrar que os meios de pagamento “mais tradicionais” são percebidos com um menor valor do que os “mais inovadores”. A escala sugerida é uma versão ampliada e adaptada do PERVAL, uma escala bem estabelecida para avaliar o valor de bens e serviços. A escala foi validada com uma amostra de dados de 400 consumidores brasileiros, utilizando a análise fatorial confirmatória. As hipóteses sugeridas foram testadas com os mesmos dados amostrais, utilizando o modelo de comparação de médias por meio de regressão linear múltipla. Os resultados mostram que o dinheiro é percebido pelos consumidores como tendo um menor valor cognitivo do que os demais meios de pagamento, e os pagamentos digitais com o que apresenta maior valor afetivo. Além disso, os pagamentos digitais foram percebidos de uma maneira geral como tendo o maior valor, captando também a atitude mais positiva por parte dos consumidores dentre aos meios de pagamento. Este estudo contribui com a literatura, primeiro por prover uma escala de avaliação do valor percebido pelos consumidores em relação aos meios de pagamento, considerando as dimensões cognitivas e afetivas e meios de pagamentos mais atuais. Segundo, mostramos que cada meio de pagamento é percebido de maneira diferente pelos consumidores, tendo os pagamentos digitais como o meio de pagamento com maior valor percebido. De acordo com a literatura, se espera que essas percepções afetem o processo de tomada de decisão do consumidor. Esse estudo também permite uma ideia mais clara das diferenças dos valores percebidos entre meios de pagamentos, resultando em insights para gerentes e para a indústria de pagamentos em como oferecer uma experiência de pagamento diferente para cada tipo de compra, assim como para o desenvolvimento de novos meios de pagamento.

PALAVRAS CHAVE: Meios de Pagamento, Desenvolvimento de Escala, Valor Cognitivo, Valor Afetivo, Valor Percebido pelo Consumidor, Processo de Decisão.

ABSTRACT

Consumers have been found to hold certain perceptions on Payment Modes (PMs) such as cash, credit or debit card, or digital payments, which will then influence their spending and purchasing behavior (e.g., the type, value and amount of purchased goods). Increasing attention has been devoted to this phenomenon. Despite the extensive body of research on the subjectivity underlying PMs and subsequent impact on consumers' decision-making process, contradictory findings have been reported. Moreover, a scale to assess consumers held perceptions of PMs is still lacking. This study focuses on the concept of consumer perception of PMs. We draw on the marketing literature on payments and on two well-accepted theoretical frameworks - the Cognitive-Affective Behavioral Paradigm and the Consumption Value Theory - to put forward three specific hypotheses on the cognitive and affective value perceived by consumers. We focus on what has been classified as the 'most traditional' and 'more innovative' PMs, i.e., cash and digital payments. The aim of this project is twofold: first, to develop a measurement scale for measuring consumers perceived value of PMs, and second, we show how traditional PMs are less valued by consumers than more innovative ones. The suggested scale is an extended and adapted version of PERVAL, a well-established scale for assessing the value of goods and services. The scale was validated with a sample data of 400 Brazilian consumers employing a confirmatory factor analysis. The suggested hypothesis were tested with the same database, using a mean comparison model via multi-linear regression. Results show that consumers perceive cash having the lower cognitive value when compared to other PMs, and digital holding the higher affective value. Also, digital was found having the highest overall perceived value, also leading to the most positive attitude regarding PMs. This study contributes to the literature, first by providing a consumer perceived value measurement scale for PM scale which considers recent PMs and the cognitive and affective dimensions. And second, we show that consumers perceive PM underlying value differently, perceiving digital PM as the one which results in higher value. This is expected to affect their decision-making. The research also provides managers and the payment industry with a clearer understanding of the differences in perceived value between different PMs, reflecting insights on the strategy regarding offered payment experiences for different types of purchases, as well as for the development of new PMs.

KEYWORDS: Payment Modes, Scale Development, Cognitive Value, Affective Value, Consumer Perceived Value, Decision Making

EXECUTIVE SUMMARY

In today's world, payments are deeply present in people's daily life and routines, being used in different contexts and formats. For these reason and added to the digitalization phenomenon that we are facing nowadays, the payments industry is constantly improving the traditional ways of paying, such as credit and debit card, developing new PMs such as digital payments (mobile payments and digital wallets – Apple Pay, Samsung Pay and others), with the aim of replacing cash and giving ways to a cashless society.

Thus, when going to shop (in-store or online), you might face the decision of choosing between different PMs to complete your purchase. And what do you feel when you choose one mode of payment instead of other to complete that purchase? What are your perceptions regarding this payment mode in your purchasing experience? What do you value the most in this payment mode that makes you want to use it again for other purchases? Do you thing that it can help you controlling your spending, or does it actually make you spend more? These are some questions that justifies the relevance of this study, and that are related to consumers' perceptions of PM.

The first objective of this study is to we put forward a scale that allows measuring consumers' perceived cognitive and affective value of different payment modes. Second, we use the developed and validated scale to understand the underlying consumer perceived value related to the modes of payments, which can be used to discuss and predict how specific PMs can influence consumers' spending perceptions and thus their expected purchasing behaviors.

In order to do so, this study analyzed data collected from 400 respondents regarding four different types of PMs (cash, credit card, debit card and digital payments) in two purchase scenarios, low and high product price. It was a requirement that all the respondents had made a purchase in the last month and had used at least once in their life each of the four payment modes of the study. We then compared the differences between these four PMs regarding their underlying consumer perceived value.

Results showed that the different PM are perceived differently by costumers in terms of value. The cognitive perceived values are predominantly higher than the affective perceived value. Consumers perceive cash having the lower cognitive value when compared to other PMs, and digital payments holding the higher affective value. Also, digital

was found having the highest overall perceived value, also leading to the most positive attitude regarding PMs.

This study provides managers developing business in the payment industry, with the possibility of exploring with more confidence the fact that PMs are perceived differently from a cognitive-affective stand, as well as importance played by different values for specific PMs. Overall, we find that consumers are strongly willing to use payments that bring them convenience, availability and easy to use, as well as having a seamless purchasing experience.

Thus, this study contributes to the development of payments related business that are present in the market, helping them to better understand the payment consumer behavior: how consumers perceive the value underlying specific payments modes, which will affect their choice on how to pay. This can provide firms with insights on the best strategy in terms of offered consumer payment experience for different types of purchases and for insights for the payments industry to build new PMs.

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1. INTRODUCTION

Payments are present and deeply embedded in people's daily life and routines, being used in different contexts and formats. During the 1900s, cash and checks were the most common forms of Payment Mode (PM), i.e., purchase exchange and financial transaction format between people and organizations (Evans & Schmalensee, 2005). Since then, payment cards (credit and debit) appeared as a new way to pay in stores and to withdraw cash from automatic teller machines (ATMs) (Slawsky & Zafar, 2005). Also, Internet payments and Internet banks emerged with the electronic commerce as an alternative way for conducting financial transactions on the Internet (Zwass, 1996). The focus has recently shifted to a digital environment, where mobile phones, wearables, other objects (e.g. key cars), and digital wallets can be used as payment devices. The forecast is that, sooner or later, cash will "die", giving ways to a cashless society (Arvidsson & Markendahl, 2014; Carton & Hedman, 2013; Hedman, 2012).

Payments based research can be classified as multi-disciplinary, given that it can be found in diverse areas, such as Information Systems (IS), Economics, Psychology and Business. The IS based research is mostly related to the adoption and diffusion of digital payment technologies (e.g. Dahlberg et al., 2008; Holmström & Stalder, 2001; Jonker, 2007; Schierz et al., 2010). Scholars from the economics school are mostly interested in the macro level of payment patterns (e.g. Garcia-Swartz et al., 2004, 2006; Humphrey, 2004, 2010; Prelec & Loewenstein, 1998). The scholars from the psychology stand are mostly interested in understanding how the payment context (e.g. pricing mechanism) affects the paying behavior (e.g. Gneezy et al., 2010; Jung et al., 2014; Menon et al., 1997). Finally, business scholars in consumer research and marketing are interested in understanding how different PMs can influence consumer decision-making and spending behavior (e.g. Chatterjee & Rose, 2012; Hirschman, 1979; Raghubir & Srivastava, 2008; Thomas et al., 2011). The latter area of payments based research has attracted the furthestmost attention, having generated diverse results with implications for businesses and for the payment industry, namely in what concerns the design of new PMs driven by the digitalization phenomenon and increasing adoption of electronic payments and replacement of cash payments (Capgemini & BNP Paribas, 2017).

In the marketing area, research suggests that the PM affects not only how much it is spent, but also the type of purchase that is made (Thomas, Desai, & Seenivasan, 2011), as

well as the feeling of ownership regarding the purchased product (Kamleitner & Erki, 2013). For example, Van der Horst and Matthijsen (2013) studied negative emotions associated with PMs and resulting pain of making the payment. Moreover, credit card payments have been found to increase the incidence of unplanned, unhealthy, indulgent food purchases (Thomas et al., 2011); this study links emotions to PMs. Bagchi and Block (2011) found results that contradict the latter, showing that in fact cash payments increase the likelihood of such purchases. This inconsistency of findings in the payments literature suggest that the way consumers pay for what they buy differs, not only in terms of physical dimensions, but also in terms of the mental and emotional experiences that specific PMs generate before, during and after being used. It also hints to the lack of a coherent view in the marketing payments literature on how to assess consumer perception of specific PMs.

The cognitive and affective aspects of PMs have been overlooked in the literature. There are nevertheless some exceptions. For example, Khan et al. (2015) developed a conceptual framework to measure consumer perceptions of PM which integrated the cognitive and emotional dimensions (scale PPM – Perception of Payment Modes). However, this suggested scale did not show a clear differentiation between the cognitive and the emotional aspects, and focused solely on cash and card payments, not providing a widely applicable measurement of consumers' perception of payments mode. Moreover, this study did not consider any form of digital payment associated with the innovative usage of mobile devices and digital wallets to purchase goods and service.

The aim of this study is thus twofold. First, based on the Cognitive-Affective Behavioral Paradigm and on Consumption Value Theory, we argue that to understand and predict how specific PMs can influence consumers' spending perceptions and thus their purchasing behaviors, it is necessary to understand their underlying perceived value. Drawing on this premise, we put forward several hypotheses on consumers' perceived value among different PMs (i.e., cash versus electronic PMs- credit card, debit card and digital payments). Results shed some light on consumers' perceived differences in terms of value of different payments modes. Second, we put forward a scale that allows measuring consumers' perceived cognitive and affective value of different PMs, namely digital modes. We believe that this distinction is necessary to allow service providers and the payments industry developing well-informed strategies regarding the usage and development of PMs.

This research entails quantitative approach. A research model was built based on the literature review and a quantitative method was used with a database of 400 Brazilian

respondents to validate the suggested scale of consumer perceived value of PMs, as well as to test the hypotheses included in our conceptual model.

This study contributes to the literature, first by improving the previously developed PM scales on the perception of PMs in two ways: it is based on well-established models of consumer behavior - Cognitive-Affective Behavioral Paradigm and the Consumption Value theory - and it considers digital payments which are the most recent payments instruments that have been introduced in the payments industry. Second, it shows the relevance of considering the cognitive and affective value of PMs, something that has not been fully addressed in the literature. This study also makes important managerial contributions. The market can benefit from this study, as it allows better understanding expected consumer payment behavior: it grasps how consumers perceive the value underlying specific PMs, which then affects their choice of PMs and their purchasing behavior. This can provide firms with insights on the best strategy in terms of offered consumer payment experience for different types of purchases. This can result in financial benefits.

This project is divided into six major sections. In the following section, we present the literature review, as well as the suggested scale for consumer's perceived value of PMs and our hypotheses. We then describe in section four our methodological choices and research design. In section five, we present and discuss the findings, and conclude with a section on overall conclusions, limitations and suggestions for future research.

2. THEORETICAL BACKGROUND

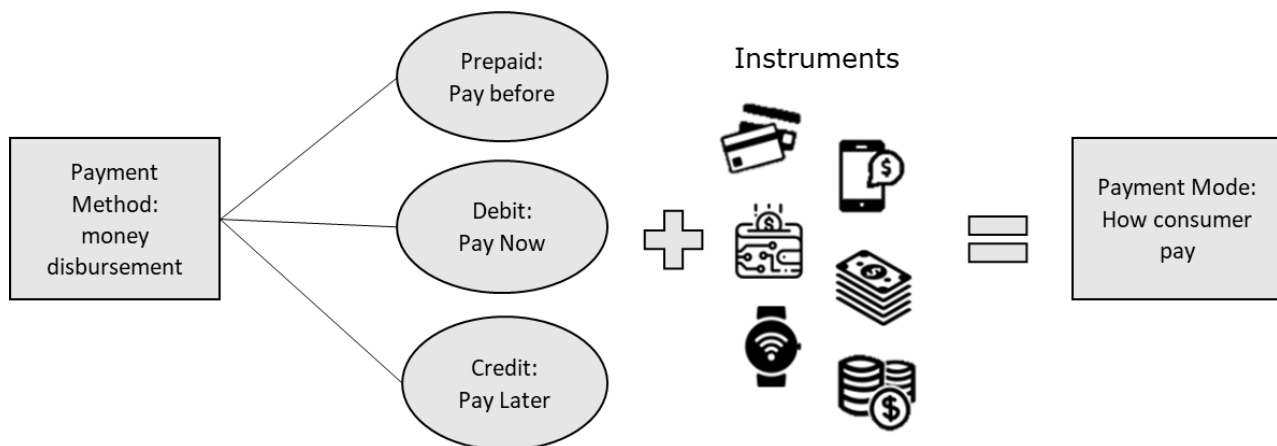
2.1. Payment Modes and Payments Methods: Conceptual Definition

The literature on payments hints a misconception on the definition of PMs and payment methods. Previous authors have used the two concepts interchangeably, using them as synonyms to define the way or the instruments/tools (cash, checks, cards, etc.) that consumer use to make payments (e.g. Hirschman, 1979; Soman, 2011; Schuh & Stavins, 2013; Khan et al., 2015). This misconception may have its origin in the traditional bricks and mortar based transactions that considered cash, checks, debit cards, and credit cards as payment methods (Foster et al. 2011). However, the payments industry that is driven by two big brands (VISA and Mastercard), uses a different definition for these two concepts. In summary, *Payment Methods* are classified according to the moment that the user/consumer disburses the amount of money corresponding to the payment, resulting in

three types of methods: prepaid (pay before), debit (pay now) and credit (pay later) (see figure 1 below).

Payment Modes, on the other hand, result from the combination between the adopted payment method and the instruments or tools that the buyer uses to make the payment in an online or offline environment (see figure 1). Most of the times, the payment mode has a payment method embedded in the payment instrument that is used, resulting in a specific ways that consumers can use to make the payment (e.g., payment cards, digital payments - mobile phone, wearables and digital wallets - , e-cash, cash, etc.). Hove and Farhod (2011) identify six groups of payments by combining the time dimension (i.e., pay-before, pay-now, and pay-later) and the payment instrument (i.e., paper or electronic). Pay-before requires buyers to deposit funds into an account prior to the actual purchase. This type of payment includes stored-value cards, prepaid cards, and gift cards. Pay-now refers to payments settled (almost) immediately, using types such as cash on delivery and debit cards. Pay-later allows the buyers to consume the products or services first and then settle the account later, using such types as credit cards and charge cards.

Figure 1. *Payments Method and Payment Modes*



Source: The author

This study focuses on payment modes, and considers cash, payment cards (debit and credit) and digital payments (mobile and digital wallets). We therefore consider the payments modes that according to BACEN (Estatísticas de Pagamentos de Varejo e de Cartões no Brasil 2016) are the most used in Brazil - cash and payments cards -, as well as the mode that is considered the most trendy and innovative - digital payments. In summary, whilst cash and payment cards are either associated with pay now (cash and debit card)

and pay later (credit card) payment methods, digital payments can correspond to any payment method (i.e., pay before, now or later). Moreover, cash corresponds to disbursement of coins and federal reserve notes. The debit card allows the cardholder to make a payment that is deducted directly from a bank account at the time of purchase or bill payment. The credit card authorizes the cardholder to make a purchase by granting a line of credit that will be paid back to the card company at a later date, possibly in installments. Finally, the digital PM allows the cardholder to make cashless and card-free payment (e.g., mobile payments and digital wallets).

2.2. Payments Modes: Perception and Consumer Behavior

Earlier marketing research on PMs focused mostly in predicting how specific perceptions and feelings underlying PMs could influence consumers' spending and purchasing behavior. More specifically, and as shown in Table 2 included at the end of this section, previous studies on PM look into the following effects regarding consumers perceptions and behaviors: 1) how PM characteristics or attributes affect consumers' perceptions of the PM, which then conditions consumer spending behavior; 2) how the purchasing context results in specific sensations, impressions or feelings regarding the used PM, and how these affect consumer spending behavior; or more simply as 3) the purchasing context (i.e., product price, type and amount; buying in-store or online; etc.), 4) the sensations, impressions, or feelings, and 5) the perception of a PM impact consumer spending behavior.

Overall, specific PMs have been found to carry certain perceptions and associations that influence consumers' behavior (Hirschman, 1979). More specifically, PMs underlying subjectivity have been found to affect the type, value and amount of products purchased per transaction (Prelec & Simester, 2001; Thomas et al., 2011; Runnemmark, Hedman & Xiao, 2015), the probability and speed of purchasing (Feinberg, 1986), and the transaction size (Abdul-Muhmin, 2010). Effects have also been found over consumers' feeling of ownership regarding the purchased product (Kamleitner & Erki, 2013) and their 'mental accounting' (i.e., "*set of cognitive operations used by individuals and households to organize, evaluate and keep track of financial activities*" (p. 40); Thaler, 1980).

Each PM is associated with specific perceptions of spending, which affects consumer spending behavior. For example, research demonstrates that the presence of a credit card logo only, can induce higher willingness to spend (Feinberg, 1986; Raghurir & Srivastava,

2008). Moreover, previous research shows that consumers tend to spend more when using card payments than when using cash (Feinberg, 1986; Hirschman, 1979). Consumer perceptions of spending associated with PMs also result in sensations, impressions, or feeling, such as that of 'pain of paying' (Prelec & Loewenstein, 1998). On this effect, previous research indicates that paying with cash is often more painful than paying with a card, an electronic PM (Prelec & Loewenstein, 1998; Raghurir & Srivastava, 2008). Moreover, this negative feeling may signal to the consumer that there is some kind of problem, and lead him to think more concretely about his spending (Schwarz, 2002; Wegner & Vallacher, 1986).

This feeling that cash based PMs are more painful than card based PMs has been widely studied and several reasons have been found to explain this phenomenon. First, cash can be classified the most transparent form of payment, with high vividness and salience (Raghurir & Srivastava, 2008; Soman, 2003), creating a more conscious understanding of the value that is being exchanged during a purchase. Cards, on the other hand, are an opaque form of payment as they do not involve the same physical price rehearsal (Soman 2003), which means that during the purchase people may not think too much about the money they are spending. As a consequence, people are expected to pay more attention be more prudent when paying with cash than with card, resulting in a more intense pain of payment. Second, card based PMs are psychologically decoupled from the purchase, and the lack of transparency makes the cost of the transaction more obscured, thus reducing the 'pain of paying' (Prelec and Loewenstein, 1998; Raghurir and Srivastava, 2008; Thaler, 1999; Tokunaga, 1993). Aligned with these assumptions, Chatterjee and Rose (2012) suggest that since credit cards separate payment (and thus, the 'pain of paying') from consumption, repeated use of credit cards reinforces the positive feelings of spending, while the immediate pain felt with cash reinforces cost considerations.

The third reason that can explain why card based PM are less painful than cash based PMs, is associated with consumers' mental representations of the paying process. More precisely, paying by cash often involves a complicated process of handing over a visible amount of cash to another person and receiving back some small amount of change; it also involved counting the received change and putting it back in a wallet or pocket (Hancock & Humphrey, 1997). By contrast, the process of card based PM is often construed simply as handing in the card, signing or PIN entering, and taking the card back. Sometimes this process can be reduced to just tapping the card or other payment device in the POS

machine. Thus, the process of paying with an electronic instrument may be more likely to be associated with the feeling of ease of use while the process of paying with cash might be associated with the feeling of 'pain of paying'.

Several other studies, some conducted in controlled environment by the use of experiments, have been able to confirm PMs' strong subjectivity and emotional nature. For example, Thomas et al. (2011) also tried to link emotions to specific PMs, assessing the effect of the 'pain of paying' via happy-sad face scales and lists of words identifying negative associations. Van der Horst and Matthijsen (2013) examined the response of the brain to videos with cash and debit card payments, and found that paying with cash triggers more positive emotions than paying by debit card.

A few studies on PMs and consumer behavior focus on how some objective characteristics and attributes of PMs, which are differently perceived by the customer, influence the adoption and usage of those PMs (Schuh & Stavins, 2013), intention to use (Liao, Shi & Wong, 2012; Teoh, Chong, Lin & Chua, 2013), and consequently consumers spending behavior (Hirschman, 1982). Research revealed several PM objective attributes along which performance was perceived to differ (Hirschman, 1982). Setup and record keeping were found being especially important in explaining PM adoption, while security was identified as important in explaining which methods consumers use for transactions (Schuh & Stavins, 2013). Benefits, self-efficacy, ease of use, convenience, automatic add-value service, compact design, security, reliability, and merchant support were identified as important PMs attributes in consumer decision making regarding the usage of specific PMs (Liao, Shi & Wong, 2012; Teoh, Chong, Lin & Chua, 2013).

Despite the recognition that PMs objective features are relevant and can determine consumer spending behavior, the predominant view and research object is that consumers' subjective perceptions and felt sensations, impressions or feelings conditions that behavior (see Table 2). However, despite the extensive body of research on the subjectivity underlying PMs and perceptions that different PMs trigger on consumers, some of previously found results are contradictory. For example, Schuh & Stavins, 2013 and Teoh, Chong, Lin & Chua, 2013 talk about different perceived attributes of the same PMs. Also, in the context of purchasing food products for immediate consumption, Inman et al. 2009 and Bagchi & Block, 2012 find different perceived values for the same PMs.

We believe these contradictory results can be explained by the inexistence of a well-established scale to assess consumers held perceptions of PMs. One exception is the scale

for measuring consumer perceptions of PMs (i.e., the PPM scale) by Khan, Belk and Craig-Lees (2015). The developed and validated scale includes constructs to capture consumers' emotions, felt social and personal gratification and resulting money management. However, this study was developed specifically for debit and credit cards only. Therefore, the suggested PPM scale did not provide a widely applicable measurement of the consumer's perception of different PMs. Besides not being flexible, the PPM scale not does consider more innovative modes to purchase goods and service such as digital payments (mobile devices and digital wallets). The authors did nevertheless point this gap as future avenues for research. Finally, although it mentions the cognitive and emotional perceptions underlying PMs, these are used interchangeably in the scale, not being possible to differentiate between them.

A well-established and universal scale would not only allow to identify how consumers perceive different PMs, but also which ones they prefer for each specific situation and to predict how each PM would affect consumers' buying behavior. In this study, besides proposing (and validating) such scale, drawing on the extant literature review, we put forward specific hypothesis on the perceptions held by consumers on the most traditional and more innovative PMs: cash and digital payments. But how should this perception be captured. This is discussed in the following section.

Table 1. Payments Modes

Reference	Paper	Journal	Core Effect	Main Findings
Hirschman (1979)	Differences in consumer purchase behavior by credit card payments system	Journal of Consumer Research	Sensation/Impression/Feeling → Spending Behavior	The study conceptualized the relationships between alternative payments systems and various environmental and behavioral variables. Showed that specific payment modes (bank card and store-issued card) carry certain attributes, which affect consumer spending behavior and indicated that consumers tend to spend more in possession of cards (bank card and store-issued card) than using cash.
Prelec & Loewenstein (1998)	The Red and The Black: Mental Accounting of Savings and Debt	Marketing Science	Sensation/Impression/Feeling → Spending Behavior	The study proposed a mental accounting theory that describes the nature of the reciprocal interaction between the pleasure of consumption and the pain of paying. Showing that the pain of paying plays an important role in consumer self-regulation, but is hedonically cost. From a hedonic perspective the ideal situation is one in which payments are tightly coupled to consumption (so that paying evokes thoughts about the benefits being financed) but consumption is decoupled from payments (so that consumption does not evoke thoughts about payments).
Soman (2001)	Effects of payment mechanism on spending behavior: the role of rehearsal and immediacy of payments	Journal of Consumer Research	Sensation/Impression/Feeling → Spending Behavior	The study showed that the use of different payments mechanisms influences both these factors (rehearsal and immediacy) and hence moderates effects of past payments on future spending. Specially, past payments strongly reduce purchase intention when the payments mechanism requires the consumer to write down the amount paid (rehearsal) that increase the "pain of pay" and when the consumer's wealth is depleted immediately rather than with a delay (immediacy).
Soman (2003)	The effect of payment transparency on consumption: quasi-experiments from the field.	Marketing Letter	Sensation/Impression/Feeling → Spending Behavior	The study showed that payment mechanisms differ from each other along the dimensions of transparency, and that the degree of transparency correlates positively with the pain of paying using the mechanism, and negatively with consumption and spending.
Raghubir & Srivastava (2008)	Monopoly Money: The Effect of Payment Coupling and Form on Spending Behavior	Journal of Experimental Psychology	Sensation/Impression/Feeling → Spending Behavior	The study examined the consumer spending as a function of payment mode both when the modes differ in terms of payment coupling (association between purchase decision and actual parting of money) and physical form as well as when the modes differ only in terms of form. They also demonstrated that the payment coupling effect influence in the "pain of paying" and showed that consumers are willing to spend more when a credit card logo is present versus absent and the credit card effect can be attenuated when people estimate their expenses using a decomposition strategy (vs. a holistic one).
Moore & Taylor (2011)	Time to Cut Up Those Debit Cards? Effect of Payment Mode on Willingness to Spend	Journal of Consumer Policy	Sensation/Impression/Feeling → Spending Behavior	The study showed that the mere exposure to logos on debit cards will result in an increased willingness to spend, similar to credit cards. The willingness to spend in the debit-logo condition was as high as the stated willingness to spend in the credit card condition. They also confirmed that it was only in the presence of logos that participants were willing to spend more using debit cards; stated spending was lower when debit cards were not accompanied by the logos.
Chatterjee & Rose (2012)	Do Payment Mechanisms Change the Way Consumers Perceive Products?	Journal of Consumer Research	Sensation/Impression/Feeling → Spending Behavior	They discussed that credit cards seem to prime consumers to think about benefits of products while cash activate costs considerations, suggesting that since credit cards separate payment (and thus the pain of paying) from consumption, repeated use of credit cards reinforces the positive feelings of purchases, while the immediate pain felt with cash reinforces cost considerations.

Reference	Paper	Journal	Core Effect	Main Findings
Feinberg (1986)	Credit Cards as Spending Facilitating Stimuli: A Conditioning Interpretation	Journal of Consumer Research	Purchase Context → Sensation/Impression/Feeling → Spending Behavior	The study showed that credit card stimuli directed spending such that the probability, speed, or magnitude of spending was enhanced in the presence of credit card cues.
Prelec & Simester (2001)	Always Leave Home Without It: A Further Investigation of the Credit-Card Effect on Willingness to Pay	Marketing Letter	Purchase Context → Spending Behavior	The study presented new evidence supporting the proposition that consumers are willing to spend more for a product when using a credit card (in at least some purchase contexts). The results are surprising both due to the size of the premium and the ubiquity of credit card use. Their results reveal a potentially large credit card premium, but the effect is not always present. In the first study, which uses goods with uncertain market value, was observed a large premium (more than 100%). However, in the second study, using a good with a known market value (a restaurant gift certificate) the premium does not always arise.
Abdul-Muhmin (2010)	Transaction size effects on consumers' retail payment mode choice	International Journal of Retail & Distribution Management	Purchase Context → Sensation/Impression/Feeling → Spending Behavior	The study examined how the monetary value of a retail transaction (transaction size) impacts consumers' preferences for cash, debit and credit card payment. They showed that preferences for debit and credit card payment modes are similar at low transaction values (both are less preferred), whilst those for debit and cash payment are similar at large transaction values (again, both are less preferred). They also suggested that electronic payment modes are collectively a substitute for cash for low transaction values, whilst credit cards are a substitute for cash and debit cards for high transaction values.
Thomas et al. (2011)	How credit card payments increase unhealthy food purchases: Visceral regulation of vices	Journal of Consumer Research	Purchase Context → Sensation/Impression/Feeling → Spending Behavior	They showed that the effects of mode of payment are contingent on the type of product (unhealthy food). Their results qualified the that pain of payment affects the willingness to spend money by demonstrating that relative to deliberative purchase decisions, impulsive purchase decisions are more likely to be influenced by pain of payment. They also contributed to the debate on whether impulsive decisions to purchase unhealthy products can be characterized as rational choices. The result that purchases of impulsive products are influenced by pain of payment, but those of planned products are not, implies that the impulsive purchase decisions cannot be adequately explained by the rational choice model. Further, their results suggest that self-control is not entirely volitional; it can be facilitated or impeded by contextual factors that change the visceral responses.
Kamleitner & Erki (2013)	Payment method and perceptions of ownership	Marketing Letters	Purchase Context → Sensation/Impression/Feeling → Spending Behavior	The study showed that payment modes also influence how consumers feel about the acquired good, focus on the effects of the payments mode on psychological ownership (perception of an object as mine). They showed that cash payment is stronger psychological ownership because it influences the extent of perceived investment in an object (cash payers feel more possessive about an acquired object than card payers).
Runnemark, Hedman & Xiao (2015)	Do consumers pay more using debit cards than cash?	Electronic Commerce Research and Applications	Purchase Context → Sensation/Impression/Feeling → Spending Behavior	The study examined the underlying mechanism of the relationship between payment methods and spending behavior by investigating whether consumers pay more for identical products using debit cards compared to cash. They showed that people are willing to pay more for identical products with debit cards than with cash, suggesting that is because of the representation of money, leading to salience of physical form and the salience of the amount paid with the card. They also suggested that the format of money matters.

Reference	Paper	Journal	Core Effect	Main Findings
Hirschman (1982)	Consumer payment systems: the relationship of attribute structure to preference and usage.	The Journal of Business Research	Characteristics → Perception → Spending Behavior	The study showed that the chosen payment mode impacts consumer spending behavior and different payment modes (cash, personal check, bank and retail cards) were perceived differently by consumers. A differential pattern of attributes (budgeting, control spending, documentation, reversibility, transaction record, leverage potential, transaction time, security, social desirability/prestige and transfer time) were perceived to compose the payment modes and a comparative analysis of the payment modes attributes revealed several dimensions along which performance was perceived to differ.
Liao, Shi & Wong (2012)	Consumer perceptions of the smartcard in retailing: an empirical Study.	Journal of International Consumer Marketing	Characteristics → Perception → Spending Behavior	The study explored consumer perceptions of the smartcard on the demand side and verify the major attributes of the smartcard for e-payment in retailing, showing that perceived ease of use, convenience, automatic add-value service, compact design, security, reliability, and merchant support are important attributes. In particular, it is important to effectively protect the individual privacy of a personalized smartcard. It is also necessary to encourage more popular merchants and service providers to participate in the implementation of the smartcard network.
Schuh & Stavins (2013)	How Consumers Pay: Adoption and Use of Payments	Consumer Payments Research Center	Characteristics → Perception → Spending Behavior	They estimated the adoption (first stage, extensive margin) and use (second stage, intensive margin) of seven payment methods and found that the characteristics of payments are important in determining consumer payment behavior, even when controlling for demographic and financial attributes: setup and record keeping are especially important in explaining adoption, while security is important in explaining which methods consumers use for transactions.
Teoh, Chong, Lin & Chua (2013)	Factors affecting consumers' perception of electronic payment: an empirical analysis	Internet Research	Characteristics → Perception → Spending Behavior	The study explored the factors influencing perception towards electronic payment (e-payment) from the Malaysian consumers' perspective. They found that benefits, self-efficacy, and ease of use exert significant influences on consumers' perception towards e-payment. However, the insignificant results obtained for trust and security warrant further investigation.
Khan, Belk & Craig-Lees (2015)	Measuring consumer perceptions of payment mode	Journal of Economic Psychology	Perception → Spending Behavior	They developed a conceptual and empirical framework and showed how the constructs and the scales capture perceptions of payment modes (PPM). The PPM scale represented four dimensions: emotions relating to cash and card based payment modes, social and personal gratification and money management. It also showed that consumer perceptions of payment modes influence spending behavior and predict ownership of financial cards in possession, indicating that the PPM scale is useful in understanding consumer cognitive and emotional associations with payment modes, particularly to the use of "owned money" and how these associations impact on payment mode choice.

Source: The author

2.3. Consumer Decision Making and Perceived Value

In this section, we suggest what we believe being a comprehensive and appropriate way of capturing consumers' perceptions of PMs. The discipline of decision making "*captures the dynamic nature of decision processes by prescribing a decision strategy that indicates what action should be chosen*" (Keeney, 1982, pg. 808). Many models have been developed to explain decision making, including the *Cognitive–Affective Behavioral* paradigm (Foxall & Goldsmith, 1994), which incorporates the affective aspect and other neuroscience psychology results (Furedy & Riley, 1987). This cognitive-affective model suggests that two processes are likely to occur when an individual is exposed to an alternative. The first produces cognitions about the alternatives given. In this case, the decision making and information processing is date-driven, rational and utilitarian (Furedy & Riley, 1987; Fishbein & Ajzen, 1975). This cognitive process includes a series of psychological processes, such as learning, developing knowledge and comprehension, thinking, making judgments, etc. Factors such as functionality, use of logic, price-quality relationship etc., affect the choice of behavior, and are examples of dominantly cognitive decision making. On the other hand, the second process provokes affective reactions to those choices. In this affective process, the decision making and information processing is feelings-driven, intuitive, and hedonic, being related to the feelings and affective behaviors such as joy, excitement, love, happiness, pride, sympathy, lust, ecstasy, fear, bewilderment, etc. (Holbrook & Hirschman, 1982). Irrational, impulsive and intuitive consumer behaviors are examples of dominantly affective decision making (Foxall & Goldsmith, 1994).

In the context of decision making for PMs, and drawing on the marketing payments literature, we argue that both the cognitive and the affective components have a fundamental role in consumers' decisions. For example, one can expect that as a seamless use experience of a PM increases (i.e., a purchase experience that has no friction, neither interruption during the payment process, is called in the payment industry as 'seamless experience'; it does not generate 'pain of paying'), the decision-making process tends to be further based on affective factors (enjoyment, confidence and secure). This means that, for example, in digital payments (e.g., mobile payments or digital wallets), which is currently a highly seamless PM, a more affect driven approach is expected to be predominant in the decision-making process.

A more holistic approach to consumer decision making has been offered by the value perspective, which is based on the idea that consumers are "value driven" (Holbrook, 1996;

Woodruff, 1997; Sheth, Newman, & Gross, 1991; Zeithaml, 1988). The concept of perceived value is widely recognized as one of the most important aspects for determining the success of a business, especially due to its direct influence on consumer buying intention and behavior (Chen & Dubinsky, 2003; Parasuraman & Grewal, 2000; Fernandez & Bonillo, 2007; Wang et al., 2004; Zeithaml, 1988). There are two major research streams within the perceived value literature. The first stream conceptualizes perceived value as a single overall concept (unidimensional), and commonly defines it as “*the customer's overall assessment of utility of a product based on perceptions of what is received and what is given*” (Zeithaml, 1988, p. 14). This approach is grounded in the notion that consumer choice is driven by the maximization of utility, and considers perceived value to be a trade-off between benefit and sacrifice (Dodds, Monroe, & Grewal, 1991; Zeithaml, 1988). While this unidimensional approach has produced significant implications, some authors have suggested that this approach is too simplistic and narrow to fully capture the complexity of perceived value (Mathwick, Malhotra, & Rigdon, 2001; Sweeney & Soutar, 2001).

As a result, broader multidimensional approaches to perceived value (second stream) began to emerge, including the Consumption Value Theory (CVT) that was developed by Sheth et al. (1991). Unlike the unidimensional approach that only captures the utilitarian aspect of perceived value, the CVT includes both utilitarian and hedonic aspects. Sheth et al. (1991) suggests that consumer choice is a function of five consumption values: functional, emotional, social, epistemic, and conditional. The functional value reflects whether or not a product is able to perform its attribute-related, utilitarian, or physical purposes. Social value refers to social and symbolic benefits offered by a product. Emotional value is related to various affective states, experiential or emotional benefits deriving from a product (e.g. joy or excitement). Epistemic value is concerned with a desire for knowledge, whether motivated by intellectual curiosity or the seeking of novelty. Finally, conditional value reflects the fact that some market choices are contingent on the situation or set of circumstances faced by the consumers.

Later on, Sweeney and Soutar (2001) extended the CVT (Sheth et al., 1991), dividing the functional value into two separate dimensions (quality and price) and removing the epistemic and conditional values. This resulted in the development of a 19-item PERVAL (Perceived Value) scale, which consists of four different dimensions: emotional perceptions, social perceptions, quality/performance perceptions and price/value for money. The introduction of the PERVAL scale enabled empirically testing the consumption value

dimensions, and consequently, encouraged the adoption of CVT in various contexts. The types of perceived value that research on CVT identified can be further categorized into two generic dimensions, namely the cognitive value dimension and the affective value dimension (Roig, Garcia, Tena, & Monzonis, 2006; De Ruyter, Wetzels, Lemmink, & Mattson, 1997).

Since CVT captures both the utilitarian and the hedonic aspects of perceived value, we believe that this multidimensional theory is more appropriate to study PMs perceptions related to decision-making when compared to a more unidimensional approach that focuses mainly on the utilitarian aspect. In addition, previous research suggests that CVT is an effective tool for investigating perceived value within many contexts (Wang et al., 2004; Williams & Soutar, 2009; Deng, Lu, Wei, & Zhang, 2010). For this reason, we extended the CVT (Sheth et al., 1991) and PERVAL scales (Sweeney & Soutar, 2001) for measuring perceived value in the context of PMs.

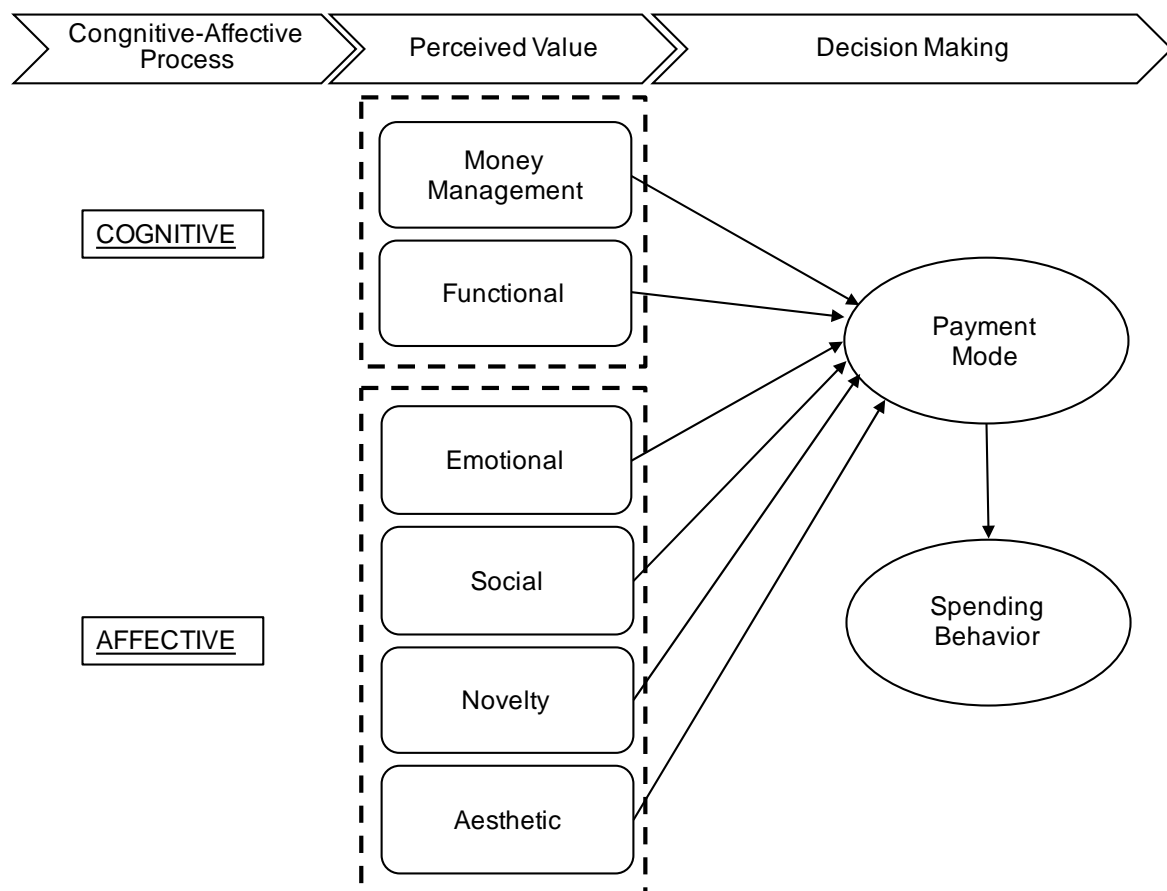
Having in mind our specific context of PMs and the literature explained before, some adjustments were made in some of the dimensions indicated in the PERVAL scale: the functional value (value for money) was renamed as money management value, to capture the consumer's mental accounting of spending and saving decisions, more specifically related to spending control (tracking and managing of spending's). The functional value (quality/performance) that represent the utility derived from the perceived quality and expected performance of the PM, was adapted to capture the perception that effective task fulfilment of PMs that has been related to convenience (flexibility and portability), availability (well-accepted) and ease of use. Emotional value, besides being associated to the originally emotional values included in PERVAL scale, was modified to also include security (safe, privacy and anonymity) and 'pain of pay'; and social, value was adopted with no major changes to the original scale.

We also included Novelty and Aesthetic values to complement PERVAL scale, as novelty has been study as the innovativeness perception on consumers' propensity to adopt a product or service (Roger & Shoemaker, 1971; Hirschman, 1980); and aesthetic as the salient visual elements perceived by the customers due to the design, physical attractiveness and beauty of the product (Bellenger, Steinberg & Stanton, 1976; Deighton & Grayson, 1995; Holbrook, 1994). So, both dimensions are expected to be important aspects related to consumers' value perception of PMs.

The conceptual model presented below in figure 2 integrates the core idea that the way consumes choose a specific PM and behave in their spending choices is dependent

upon their perceived and multi-attribute cognitive and affective value underlying specific PMs. The mental processes underlying the formation of a perceived value result from a stimulus associated with previous consumer-payment mode interaction experiences (Bettiga & Lamberti, 2017). In this research project, we focus our attention in a specific part of this model: the perceived value. As discussed in the previous section, there is no consensus on how consumers' perceived value of PMs should be captured.

Figure 2. *Decision Making Framework in Payment Mode*



Source: The author

3. HYPOTHESES DEVELOPMENTS

Based on the Cognitive-Affective Behavioral Paradigm, money management and functional forms of value are cognitive, as they are results of the mind. More specifically, these two form of value refer to cognitive responses, involving thinking, understanding and interpreting the payments environment. In addition, emotional, social, novelty and aesthetic forms of value can be considered as affective. They refer to feelings-driven responses,

which are often irrational and impulsive. These forms of value and suggested hypotheses are developed below.

3.1. Cognitive Perceived Value

The 'mental accounting theory' has been used in the literature to explain how PMs influence consumers' money management practices. Thaler (1980) conceptualized mental accounting as a "*set of cognitive operations used by individuals and households to organize, evaluate and keep track of financial activities*" (p. 40). At the transaction level, people are said to mentally "*open*" an account for each transaction, and to base their decisions by evaluating the perceived benefit deriving from consumption and associated cost. These mental accounts help reducing the cognitive load on the decision makers. Over time, people develop mental filters as shortcuts to make decisions on how to pay. Thaler (1985, 1999) and Gourville and Soman (1998) explain this mental accounting phenomenon as a pseudo-sunk cost effect. This effect is evident when people withdraw cash from an ATM to pay for the bus fare, lunch, parking fees or weekly pocket money. When consumers withdraw money from the ATM, the cash is, from a mental account perspective, mentally spent.

The cognitive perceived money management value is also directly associated with spending control regarding consumer purchasing behavior. Some researchers argue that the difference in consumer purchasing behavior associated with the usage of different PMs results from the opacity of non-cash PMs, showing that consumers tend to spend more when using a credit card than cash (Feinberg, 1986; Hirschman, 1979). Srivastava and Raghurir (2002) demonstrate that when compared with cash, credit card usage might lead people to remember the expense they have made with less accuracy. Cash payments are more transparent than card payments for purchase transactions, making it easier to control spending (Hirschman, 1982); moreover, this effect is not solely due to cash-on-hand constraints (Runnemark, Hedman & Xiao, 2015).

The cognitive perceived functional value is aligned with previous research on perceived payment attributes related to PMs (e.g., Trütsch, 2016; Schuh & Stavins, 2013; Liao, Shi & Wong, 2012; Hirschman, 1982). These previous studies focused on the importance of certain attributes of specific PMs, such as convenience, ease of use, speed, record keeping and security. Cash payments revealed to be primary perceived as higher widespread acceptable, self-budgeting device, and to help consumers in control spending (Hirschman, 1982).

Digital Payments (mobile payments and digital wallets), on the other hand, are perceived being more convenient, as well as easier to use, and more capable of providing better records than the remaining PMs (Mallat, 2007). These functional features can make electronic payments more attractive than cash payments, due to the convenience resulting from technological modifications (Jonker, 2007). Perceived ease of use, usefulness, and trustworthiness have been found to be the most important factors in the context of electronic payments use (Dahlberg et al. 2008).

Based on the presented explanation of the cognitive perceived value for different PMs, we can argue that the perceived money management value tends to be higher for cash payments than for any other PMs, given that cash payments revealed to be primary perceived as widespread acceptable, self-budgeting device, and to help the consumer control spending (Hirschman, 1982). On the other hand, the functional perceived value is prone to be lower for cash payments when compared to other PMs, as digital payments. Hirschman (1982) showed that perceived PMs attributes revealed several dimensions along which performance was perceived to differ, and as performance are related to functional attributes (Sweeney & Soutar, 2001), we can thus consider that the functional values play a greater role than the money management values on the cognitive value perceptions. Therefore, it can be hypothesized that:

Hypothesis 1: The cognitive perceived value is lower for cash than for electronic payment modes.

3.2. *Affective Perceived Value*

Perceived emotional values of different PMs are associated with security (safe, privacy and anonymity) and pain of pay (Prelec & Loewenstein, 1998; Raghubir & Srivastava, 2008; Thaler, 1999; Tokunaga, 1993). In the context of payment services, the security aspect is directly linked with privacy risk, the consumer's assessment on "*potential losses to the privacy and confidentiality of personally identification information*" (Featherman and Wells, 2010), which can lead to potential identity theft. Privacy risk, and in particular identity theft, is one of the main causes that makes consumers hesitate to complete their transactions. Tsai et al. (2011) showed that some online consumers are more willing to purchase items from a website with privacy protection than from one without, even if they need to pay a price premium. Security were showed to be one of the most strongly perceived

attributes of PMs (Schuh & Stavins, 2013; Liao, Shi & Wong, 2012) and indicated to be higher in electronic PMs.

Yet, as we have discussed earlier, the affective factor of 'pain of paying' is associated with transparency, vividness and salience of PMs (Raghubir and Srivastava, 2008; Soman, 2003) and these are stronger in cash payments. This generates a stronger emotional link to the amount of money being spent during a transaction, while electronic payments are the opposite. The psychologically decoupled effect generated by electronic payments from purchase, may also result in a reduced the emotional 'pain of paying' (Prelec and Loewenstein, 1998; Raghubir and Srivastava, 2008; Thaler, 1999; Tokunaga, 1993). Also, the mental representation of the process of paying for cash and digital influence the extent of 'pain of paying': by cash, the representation often involves a more complicated process of paying (Hancock & Humphrey, 1997), than the one involved in the seamless and easier process of electronic based PMs. For these reasons, paying with cash is often more painful than paying with electronic payments (Prelec and Loewenstein, 1998; Raghubir & Srivastava, 2008). This justifies why the affective feeling of 'pain of paying' is less felt for electronic PMs.

The affective social values are related with social status, sophistication, sensation and pleasure to measure social gratification. Nowadays, people do not display stacks of cash in public, due to safety and security concerns (Khan et al., 2015). However, paying by premium credit and debit cards (e.g., gold or platinum or black) or using mobile phones and other devices, resemble the age-old symbols of status, and serve to communicate one's purchasing power and sophistication (Khan et al., 2015). Neuroscience provides evidence that money and social status are processed in the same brain region (the striatum), and that people tend to define social standing by weighing their spending and wealth (Zink et al., 2008). Because differently from the credit card, the debit card can signal having money in the bank, debit card usage might be associated with higher social status than the remaining PMs.

The affective novelty value is associated with a desire for knowledge, whether motivated by intellectual curiosity or the seeking of novelty (Sheth et al., 1991). Previous payment based research has investigated its influence on the intention of using different technologies, such as the use of mobile phone cameras for e-shopping (Rouibah, 2011) and electronic payment system (Yang et al., 2012; Dahlberg et al., 2008). In addition, previous research has investigated the novelty value effect on different variables, such as ease of

use and usefulness (Dahlberg et al., 2008). Based on this we argue that perceived novelty value is higher for electronic payments than for cash, and given that digital payments is the most recent and innovative PM available in the market, it might be novelty value perceived higher than the remaining electronic payments

Finally, the affective aesthetic value refers to the value that a PM has due to its capacity to provoke positive feelings when appreciated or experienced aesthetically (Holbrook, 1996). It also refers to the response to the shape, color, proportion and general pleasantness of the PM, that encompasses the merely performance and elicit beauty (Veryzer, 1993). Consumer research confirmed the importance of aesthetics in consumer choice by demonstrating that more than utilitarian evaluations, consumers pursue aesthetics value, even within product categories that are not purely aesthetic (Hagtvedt & Patrick, 2008; Reimann & Zaichkowsky, 2010). The PMs literature demonstrated that the aesthetic value influence how different PMs were perceived, showing that the mere presence of a credit card logo can induce higher willingness to spend (Feinberg, 1986; Raghurir and Srivastava, 2008). We therefore expect that the perceived aesthetic value is higher for electronic payments than for other PMs.

An overall perspective of the several components of the affective perceived value lead us to suggest that this perceived value is higher for electronic PMs (credit, debit and digital payments), than for cash payments. Additionally, Trütsch (2016) showed that digital payments (more specifically to mobile payments) can be regarded as complementary to traditional card payments, but it is perceived having more technological and innovative features than card payments. Therefore, it can be hypothesized that:

Hypothesis 2: The affective perceived value is a) higher for electronic payments than for cash, and b) higher for digital payments than for the remaining electronic payments.

3.3. Attitude Towards Payment Modes

According to the information processing perspective, perception affects attitude and behavior (Ajzen, 1991; Fishbein & Ajzen, 1975). A number of studies confirmed that positive affect could lead to more positive attitudes (Batra & Stayman, 1990; Holbrook & Batra, 1987), and it can also be responsible for the generation of favorable thoughts and opinions aimed at keeping positive emotions and feelings during time. Ting, Yacob, Liew and Lau (2015) showed that the attitude towards the electronic payments are positively predicted by

perceived values as usefulness, ease of use, trust and safety. As previous explained, perceived ease of use, usefulness, and trustworthiness are found to be the most important factors in the context of electronic payments use (Dahlberg et al. 2008). Additionally, electronic payments are perceived being more convenient and ease to use than cash payments (Mallat 2007). Besides that, electronic payments are indicated as a substitute for paper-based PMs such as cash (Trütsch, 2016), we hypothesize that:

Hypothesis 3: People have a less favorable attitude toward cash than towards electronic payment modes.

4. METHODOLOGY AND RESEARCH DESIGN

4.1. Data Collection

We employed a factorial survey for the data collection (Rossi & Anderson, 1982). This method consists of an experiment that is administered to a representative sample of the population, combining the advantages of a survey (generalizability) and of an experiment (causality) (Mutz, 2011). It therefore offers a better approximation to “real” cases than traditional surveys (Sauer, Auspurg, Hinz, & Liebig, 2011). Factorial surveys are based on the following experimental premise: the researcher presents respondents with a hypothetical scenario and asks for their opinion or reactions to the scenario. Not all respondents however are exposed to the same scenario. The researcher creates multiple subtle variations on the scenario systematically manipulating one or more elements of the survey across subjects. This allows statistical testing of the impact of the variations on respondents’ reactions to the scenario (Aviram, 2012).

For the factorial survey of this study, a representative fictitious payment scenario served as stimulus. This scenario was based on prior payments studies which reported that transaction characteristics (e.g., transaction context, product price, and product type) may influence the choice of the PM (E.g., Bounie & Francois, 2009; Carow & Staten, 1999; Ching & Hayashi, 2010; Klee, 2008; Simon et al., 2010). More specifically, Hayashi and Klee (2003) showed that product price affects PMs choice in the following way: there is a prevalence of cash payments as the consumer chosen PM for small price products and services. Eight scenarios and thus surveys were developed. The items for all the surveys were exactly identical. Each variation of the surveys corresponded to one of the four PMs (cash, debit card, credit card and digital payments) separated in two different purchase scenarios:

purchase of a low price product (E.g., snack, public transportation ticket, expresso coffee or other products with similar price) *versus* purchase of a high price product (E.g., mobile phone, flight tickets or other products with similar price).

Data was collected by Mindminers, a Brazilian market research company. This agency uses a platform where respondents are motivated to respond to surveys to earn credits which they can then exchange for products and services. Mindminers proceeded to a database mapping for this research, in order to include in the sample only respondents that had used at least once all four considered PMs. Also, at the beginning of the survey, a question that worked as a filter asked when the respondent had made a payment for the last time. If the respondent chose the option “more than one month ago”, he/she would not be considered for the study. The final database included 400 responses that were PM users, with 100 respondents for each PM (i.e., cash, credit card, debit card, and digital payments), and 50 respondents for each considered survey scenario.

An extended version of the PERVAL scale (Sweeney & Soutar, 2001) was employed for measuring the values that influence PMs’ decision making. As mentioned in section 2.3, to accommodate the special nature of PMs, some changes were made to some constructs and items included in the original scale. Especially in the case of money management value, items from the PPM scale by Khan, Belk & Craig-Lees (2015) were incorporated in our scale in order to test the spending and saving effects. Some major changes were also made in the functional value. In this case, items from Davis et al. (1989), Tan et al. (2010) and Tan et al. (2014) were incorporated in order to accommodate convenience (flexibility and portability), availability (well-accepted) and ease of use, all relevant PM attributes. Items measuring novelty were adopted from Unger & Kernan (1983) and aesthetics from Mathwick et al. (2001).

We also collected data on the Attitude towards PMs, and for this we adopted an already existing scale by Oh et al., (2003). All constructs were measured on a 7-point Likert scale (see Table 2 below). As existing scales were published in English, they were translated to Portuguese (language of questionnaire application) and then translated back to English by a third person (a fluent speaker). The aim of this exercise was to ensure accuracy of translation.

Table 2. *Survey items*

Construct	Item	Statement	Adjusted From
Money Management	MON1	This payment mode has a reasonable cost benefit relationship (E.g. fees x loyalty points)	Sweeney & Soutar (2001)
	MON2	This payment mode would help me to spend less money.	
	MON3	This payment mode would help me to keep tracking my spending.	
	MON4	This payment mode would help me to better manage my spending.	
Functional	FUN1	This payment mode almost never fails when use it.	Sweeney & Soutar (2001)
	FUN2	This payment mode allows fast payment	
	FUN3	This payment mode makes life easier.	
	FUN4	This payment mode provides ease of use experience.	
	FUN5	This payment mode brings convenience to my life	
	FUN6	This payment mode is available everywhere.	
Emotional	EMO1	I would enjoy using this payment mode	Sweeney & Soutar (2001)
	EMO2	I would feel confident in using this payment mode	
	EMO3	I would feel secure about using this payment mode	
	EMO4	Using this payment mode would give me pleasure	
	EMO5	Using this payment mode I would not feel the pain of paying	
Social	SOC1	Using this payment mode would help me to feel acceptable	Sweeney & Soutar (2001)
	SOC2	Using this payment mode would improve the way I am perceived	
	SOC3	Using this payment mode, I would make a good impression on other people	
	SOC4	Using this payment mode would provide me with social approval	
Novelty	NOV1	I would use this payment mode to satisfy my curiosity	Unger & Kernan (1983)
	NOV2	I would use this payment mode to have novel experiences	
	NOV3	I would use this payment mode to feel like I am exploring new worlds	
Aesthetic	AES1	The way this payment mode is displayed is attractive	Mathwick et al. (2001)
	AES2	This payment mode is aesthetically appealing	
	AES3	I like the way this payment mode looks	
Attitude	ATT1	Using this payment mode is a good idea	Oh et al. (2003)
	ATT2	Using this payment mode is unpleasant	
	ATT3	Using this payment mode is beneficial	

Source: Adapted from Sweeney & Soutar (2001); Unger & Kernan (1983); Mathwick et al. (2001); Oh et al. (2003)

After conducting several pretests, the questionnaire was rolled out in April 2018 by MindMiners. The items in the survey were displayed to the respondents in a randomized order to avoid the ability to detect patterns between measurement and also bias (Cook & Campbell, 1979).

4.2. Data Analysis

The statistical applications used for the data analysis were all performed in the statistical software STATA, version 12. In order to validate the proposed scale, an initial exploratory factor analysis (EFA) was performed to assess the properties of the initial measures (25 items in total) and to eliminate items with low factor loadings and high cross loadings. Prior to that, the suitability of the data for factor analysis was assessed. The Kaiser-Meyer-Olkin (KMO) value was 0.96 and thus exceeded the recommended value of 0.6 (Kaiser, 1970). Finally, the Bartlett's test of Sphericity reached statistical significance, supporting the factorability of the data (Bartlett, 1951). The statistical properties of the

constructs were then evaluated through a confirmatory factor analysis (CFA) and since the initial model fit statistics indicated that the model could be improved, the loadings (consistency within and across constructs) and correlations were examined and revised (Hair et al., 2010), resulting in a total set of 20 items. Table 3 shows the final solutions of the measures by components that reflect a scale for measuring consumers' perceived cognitive and affective value of PMs.

Table 3. Factor Analysis Results

<i>Factor</i>	<i>Standardized Results</i>
<i>Money Management</i>	
1. This payment mode would help me to keep tracking my spending	.87
2. This payment mode would help me to better manage my spending	.83
<i>Functional</i>	
3. This payment mode allows fast payment	.71
4. This payment mode makes life easier	.87
5. This payment mode provides ease of use experience	.79
6. This payment mode brings convenience to my life	.84
<i>Emotional</i>	
7. I would enjoy using this payment mode	.83
8. I would feel confident in using this payment mode	.74
9. I would feel secure about using this payment mode	.70
10. Using this payment mode would give me pleasure	.77
<i>Social</i>	
11. Using this payment mode would help me to feel acceptable	.87
12. Using this payment mode would improve the way I am perceived	.84
13. Using this payment mode, I would make a good impression on other people	.89
14. Using this payment mode would provide me with social approval	.88
<i>Novelty</i>	
15. I would use this payment mode to satisfy my curiosity	.78
16. I would use this payment mode to have novel experiences	.85
17. I would use this payment mode to feel like I am exploring new worlds	.89
<i>Aesthetic</i>	
18. The way this payment mode is displayed is attractive	.81
19. This payment mode is aesthetically appealing	.82
20. I like the way this payment mode looks	.81

Source: The author

The final model (Table 4, using 20 items) shows good statistics fit (Hair et al., 2006). Both the comparative fit index (CFI= 0.954) and the goodness of fit index (GFI=0.944) were above the recommended thresholds of 0.90 (Hair et al., 2006). Moreover, the root mean square residual (RMR=0.051) and the root mean square error of approximation (RMSEA=0.068) were between the acceptable threshold of 0.05 to 0.07 proposed by Hair et al. (2006). Although the chi-square has strongly improved compared to the initial model, it was considered as a poor gauge of overall model fit (Bentler, 1990). However, given the relatively large sample size of 400 and the fact that chi-square increases and becomes significant with sample size (Hair et al., 2010), as well as the excellent fit with respect to all other fit measures, it can be concluded that acceptable model fit has been achieved.

Table 4. CFA fit statistics

	<i>Initial Model</i>	<i>Final Model</i>
RMSEA (<0.08)	.082	.068
RMR (<0.08)	.072	.051
CFI (>0.90)	.900	.954
GFI (>0.90)	.885	.944
χ^2	965.99	438.27
Df	260	155

Source: The author

After conducting the CFA, the convergent and discriminant validity, as well as the reliability of the constructs were assessed, based on Fornell & Larcker's (1981) technique. We used three metrics for this purpose: composite reliability, average variance extracted (AVE) and Cronbach's alpha (Table 5). The composite reliability brings the confidence that each individual indicator is consistent in its measurement and the threshold value acceptable is 0.7 (Fornell & Larcker, 1981). The AVE reflects the overall amount of variance in items accounted for by the latent construct and the threshold value acceptable is 0.5 (Fornell & Larcker, 1981). The Cronbach's alpha is a reliability coefficient that assess the consistency of the entire scale, which has a lower limit of 0.8 (Fornell & Larcker, 1981).

Table 5. CR, AVE and Cronbach`s alpha

	CR>= .70	AVE>= .50	Cronbach`s alpha >= .80
1. MON	.954	.913	.837
2. FUN	.981	.927	.880
3. SOC	.973	.900	.840
4. EMO	.977	.914	.925
5. NOV	.964	.899	.874
6. AES	.969	.912	.855

Source: The author

Accordingly, the revised model was accepted and the final constructs and respective items for money management, functional, emotional, social, novelty and aesthetic values were used to test the proposed hypotheses. Ratings on the items were then averaged to generate mean scores for each of the six dimensions. Subsequently, in order to examine the explanatory power of the model, a mean comparison model was conducted through a multi-linear regression model, which allows analyzing the relationship between several independent variables (x) and the dependent variable (y), to predict the value of y as a function of x.

Wherefore, to analyze consumer perceived value of each PM, a multi-linear regression was performed for each construct. For this, the mean score of the construct was considered as dependent variable, and the four PMs (cash, debit card, credit card and digital payments) were considered as independent variables (Dummy variables were created for this). As control variables in the regression model, we considered the socio-demographic information (gender, age, social class, education and region) and the product price (high and low); were also used Dummy variables for this purpose. We then conducted a multi-linear regression for the total and partial cognitive values (money management and functional) and for the total and partial affective values (emotional, social, novelty and aesthetic).

In addition to the multi-linear regression, other resources were adopted to improve the explanatory power of the model and level of significance of the variables. First, we conducted a White test to identify the homoscedasticity of the errors, that is, if the residue variation was constant for the variables. To control the heteroskedasticity identified in the models, robust standard errors were used in the regressions (Wooldridge, 2010). Second, a Jaque-Bera test was used to verify if the distribution of residues followed a normal distribution. The normality of the errors was not valid; however, the sample size is large and results are justified by the Central Limit Theorem.

5. RESULTS AND DISCUSSION

5.1 Descriptive Analysis

We began by carrying out an initial descriptive analysis. The results for socio-demographic information (Table 6) indicated that among the analyzed sample (N = 400), female respondents represented a slightly higher percentage (50.5%) as compared to male respondents (49.5%). The majority of the respondents were between 20 and 30 years old (53.0%), followed by the age group 31-40 years (33.75%). The mean age of respondents was 29.8 years, ranging from 18 to 55 years old. The completed sample was composed of well-educated individuals. For example, approximately 47% of the respondents had at least completed a bachelor's degree with 7.25% having completed a post-graduation education. As for social classes, the majority of the participants were from a medium level (B1 and B2 – 53%), followed by a lower level (C1 and C2 – 28.75%). Moreover, our sample mostly comprised respondents from Southeast (59.75%), followed by Northeast (18.75%) and South (13.75%) regions of Brazil.

Table 6. Descriptive Analysis: Socio-demographic Information

Gender			
Male	49.50%		
Female	50.50%	Region	3.00%
		North	3.00%
		Northeast	18.75%
Age		Midwest	4.75%
< 20	5.00%	Southeast	59.75%
20 - 25	29.00%	South	13.75%
26 - 30	24.00%		
31 - 35	21.00%	Social Class	
36 - 40	12.75%	A	17.75%
> 40	8.25%	B1	18.00%
		B2	35.00%
Education		C1	21.00%
Less than high school	4.25%	C2	7.75%
High School	48.50%		
Undergraduate	40.00%		
Postgraduate	7.25%		

Source: The author

The descriptive analysis of the perceived values (dependent variable) per PM (cash, debit card, credit card and digital payment) is represented in the Table 7 below. Although this analysis does not aim to be conclusive, it hints some interesting results that were explored later with the regression analysis.

Considering the combination of the perceived cognitive and affective values, the digital payments are, on average, perceived having the highest cognitive values (MON and FUN) when compared with the others PMs. The same happens with the affective perceived values (EMO, SOC, NOV and AES), that also presented higher mean for digital payments than for other PMs. Digital is therefore the PM with higher overall perceived value. This analysis also shows that the payments modes have, on average, a higher cognitive than affective value.

Looking at the partial values, results indicate that the money management perceived value (MON) has a higher mean for debit card (5.36), followed by digital payments (5.29), credit card (5.25) and lastly cash (4.79). The others perceived values (functional – FUN, emotional – EMO, social – SOC, novelty – NOV and aesthetic – AES) show a higher mean for digital payments than for the remaining PMs. For the functional (FUN) perceived value, digital payments are followed by credit card, debit card and then cash. The same happens with the aesthetic perceived value, but credit card (4.93) and debit card (4.92) have a very close mean between them. A different followed sequence of the other PMs after digital payments are demonstrated for Emotional, Social and Novelty perceived values, where after digital payments came debit card, credit card and cash for Emotional; cash, debit card and credit card for Social; and credit card, cash and debit card for Novelty. This descriptive analysis also shows that the functional perceived value has the highest mean between the perceived values for all PMs. On the other hand, the social perceived value is the lowest.

Table 7. *Descriptive Analysis: Perceived Values x Payment Mode*

	CASH "x-bar" (s)	DEBIT "x-bar" (s)	CREDIT "x-bar" (s)	DIGITAL "x-bar" (s)
MON	4.79 (1.84)	5.36 (1.51)	5.25 (1.62)	5.29 (1.62)
FUN	5.11 (1.45)	5.87 (1.21)	5.91 (1.09)	5.95 (1.06)
EMO	4.92 (1.60)	5.30 (1.29)	5.07 (1.48)	5.45 (1.24)
SOC	4.14 (1.69)	4.02 (1.72)	3.82 (2.02)	4.16 (1.81)
NOV	4.32 (1.88)	4.30 (1.76)	4.43 (1.76)	5.02 (1.60)
AES	4.75 (1.66)	4.92 (1.52)	4.93 (1.58)	5.30 (1.41)
Cognitive	4.95 (1.53)	5.61 (1.18)	5.58 (1.24)	5.62 (1.30)
Affective	4.53 (1.51)	4.64 (1.39)	4.56 (1.58)	4.68 (1.46)

Source: The author

5.1 Multi-Linear Regression Model Analysis

We ran a multi-linear regression to test the suggested hypotheses; more precisely, we ran one multi-linear regression for each hypothesis, which corresponded to a specific group of perceived value (i.e., cognitive and affective), as well as one for attitude towards PMs. Initially, the regression models considered all collected socio-demography information as control dummy variables. However, most of those dummy variables were found not significant for the model ($p < .10$). As a result, only product price and the respondent's demographic region were kept as control variables.

In order to get a more detailed overview of the results for H_1 and H_2 , we also ran a regression model for each perceived value (i.e., money management, functional, emotional, social, novelty and aesthetic). Also, for each model we ran all regressions changing the reference of the independent dummy variables built to the PMs. So, first we performed the regression with cash as reference, then credit card, debit card and digital payments respectively, as showed in the results table (Table 8).

Table 8. Regression Results

Dependent Variables										
	Cognitive Coef. (Std. Err.)	Affective Coef. (Std. Err.)	MON Coef. (Std. Err.)	FUN Coef. (Std. Err.)	EMO Coef. (Std. Err.)	SOC Coef. (Std. Err.)	NOV Coef. (Std. Err.)	AES Coef. (Std. Err.)	Attitude Coef. (Std. Err.)	
Independent Dummy Variables										
Cash Reference										
CREDIT	.64 (.20)***	.04 (.21)	.46 (.23)**	.81 (.18)***	.16 (.20)	-.31 (.26)	.13 (.25)	.19 (.22)	.33 (.17)**	
DEBIT	.70 (.20)***	.13 (.21)	.61 (.23)***	.78 (.19)***	.40 (.20)**	-.10 (.26)	.02 (.25)	.20 (.22)	.73 (.17)***	
DIGITAL	.67 (.19)***	.47 (.21)**	.50 (.23)**	.84 (.18)***	.52 (.20)***	.02 (.26)	.75 (.25)***	.57 (.22)***	.62 (.17)***	
Credit Reference										
CASH	-.64 (.20)***	-.04 (.21)	-.46 (.23)**	-.81 (.18)***	-.16 (.20)	.31 (.26)	-.13 (.25)	-.19 (.22)	-.33 (.17)*	
DEBIT	.06 (.17)	.09 (.21)	.15 (.23)	-.03 (.17)	.24 (.20)	.21 (.26)	-.11 (.25)	.01 (.22)	.40 (.17)**	
DIGITAL	.03 (.17)	.42 (.21)**	.03 (.23)	.03 (.15)	.36 (.20)*	.33 (.26)	.62 (.25)**	.38 (.22)*	.29 (.17)*	
Debit Reference										
CASH	-.70 (.20)***	-.13 (.21)	-.61 (.23)***	-.78 (.19)***	-.40 (.20)**	.10 (.26)	-.02 (.25)	-.20 (.22)	-.73 (.17)***	
CREDIT	-.06 (.17)	-.09 (.21)	-.15 (.23)	.03 (.17)	-.24 (.20)	-.21 (.26)	.11 (.25)	-.01 (.22)	-.40 (.17)**	
DIGITAL	-.03 (.16)	.34 (.21)*	-.11 (.23)	.06 (.16)	.12 (.20)	.12 (.26)	.73 (.25)***	.38 (.22)*	-.11 (.17)	
Digital Reference										
CASH	-.67 (.19)***	-.47 (.21)**	-.50 (.23)**	-.84 (.18)***	-.52 (.20)***	-.02 (.26)	-.75 (.25)***	-.57 (.22)***	-.62 (.17)***	
DEBIT	.03 (.06)	-.34 (.21)*	.11 (.23)	-.06 (.16)	-.12 (.20)	-.12 (.26)	-.73 (.25)***	-.38 (.22)*	.11 (.17)	
CREDIT	-.03 (.17)	-.42 (.21)**	-.03 (.23)	-.03 (.15)	-.36 (.20)*	-.33 (.26)	-.62 (.25)**	-.38 (.22)*	-.29 (.17)*	
Control Dummy Variables										
PRICE	.22 (.13)*	.24 (.15)*	.22 (.16)	.21 (.12)*	.11 (.14)	.30 (.18)*	.30 (.18)*	.25 (.15)	.12 (.12)	
SOUTH	-.45 (.36)	-.95 (.46)**	-.50 (.51)	-.40 (.33)	-.62 (.45)	-.10 (.58)*	-.120 (.57)**	-.88 (.49)*	.18 (.39)	
SOUTHEAST	-.46 (.33)	-.77 (.43)*	-.54 (.47)	-.37 (.31)	-.65 (.42)	-.107 (.53)**	-.69 (.53)	-.66 (.46)	-.09 (.36)	
MIDWEST	-.27 (.43)	-.67 (.54)	-.19 (.59)	-.35 (.41)	-.68 (.52)	-.106 (.67)	-.50 (.66)	-.45 (.57)	.02 (.45)	
NORTHEAST	-.05 (.35)	-.47 (.45)	-.01 (.50)	-.10 (.33)	-.34 (.44)	-.68 (.56)	-.44 (.56)	-.42 (.48)	.11 (.38)	
R-squared	.07	.04	.04	.09	.03	.03	.05	.02	.06	
F	3.13**	1.95**	2.22**	4.23***	1.76*	1.43	2.66***	1.81*	3.33***	

* significant at p < .10; ** significant at p < .05; *** significant at p < .01

Notes: The regressions of Cognitive and FUN perceived value were run with vce robust (White Test)

Source: The author

(H₁): The cognitive perceived value is lower for cash than for electronic payment modes.

The results of the cognitive regressions showed that the model is statistically significant ($p < .05$), as well as the PM independent variables ($p < .01$). The coefficient of those variables shows that the cognitive perceived values are lower for cash than for the remaining PM. H₁ was therefore supported.

Analyzing each cognitive value (MON and FUN) regression separately, we conclude that our H₁ was reinforced. Once the MON regression model (statistically significant - $p < .05$; as well as the PMs independent variables - $p < .01$ or $p < .05$) shows that money management perceived value for cash is lower than for credit card, debit card and digital payments, and this other PMs are equally perceived regarding this value. Additionally, the FUN regressions model (statistically significant - $p < .01$) outputs showed that the perceived functional value is lower for cash than for any other PM, being equally perceived between for credit and debit cards and digital payments. Thus, the MON regression results do not corroborate with the previous literature according to which consumers tend to spend more when using electronic payment cards than when using cash (Feinberg, 1986; Hirschman, 1979), and that cash helps consumers to control their spending due to cash-on-hand constraints (Runnemark, Hedman & Xiao, 2015); cash's perceived money management value was in fact the lowest amongst PMs. This result might be explained by the increased use of mobile applications related to PMs, such as mobile banking and applications of payments service providers, which help consumers to more easily track and control their spending; this results in a decreasing sense that spending control can solely be achieved by "cash-on-hand" constraints. Hayashi (2012) showed that digital payments can provide consumers much greater ability than traditional payment methods to monitor finances and control spending.

The FUN regression results are, on the other hand, aligned with the results from previous research related to the importance of perceived PMs attributes for the adoption and intension of use, such as convenience, ease of use, speed, record keeping and security (e.g. Arango et al. 2015; Liao, Shi & Wong, 2012; Schuh & Stavins 2010; Hirschman, 1982). These previous studies showed that cash payments have the lower perceived payments attributes, which is corroborated by our data.

(H₂): The affective perceived value is a) higher for electronic payments than for cash; b) higher for digital payments than for the remaining electronic payments.

The results of affective regressions showed that the model is statistically significant ($p < .05$), as well as the PMs independent variables ($p < .01$ or $p < .05$). The coefficient of those variables shows that the affective perceived values are higher for electronic PMs than for cash (H_{2a} was supported), and also higher for digital payments than for the others PM (H_{2b} was supported).

Considering the regressions of each affective value separately, the NOV and AES regressions results reinforced our H_{2b}, while EMO partially reinforced and SOC was neutral: NOV and AES regressions showed that the model is statistically significant ($p < .01$ and $p < .05$, respectively) and the coefficients of the PMs independent variables show that both perceived novelty and aesthetic values are higher for digital payments than for other PMs, and the other PMs are equally perceived regarding novelty and aesthetic values; EMO regressions showed statistical significance for cash ($p < .01$) and credit cards ($p < .10$), but not for debit cards, when referenced for digital payments. As such, emotional perceived value is higher for digital payments than for cash and credit cards, but it is equally perceived for debit card, as well as between cash and credit cards; and SOC regressions indicated non-statistically significant results, showing that there is no relevant difference in terms of perceived social value between the different PMs.

Once our affective value is associated to the PM's perception of security and 'pain of paying' (FUN), social gratification (SOC), seeking of novelty (NOV) and the positive feelings when appreciated or experienced aesthetically (AES). We can argue that our results are aligned with the literature related the perceptions of PMs, according to which electronic payments are considered more secure than cash (Schuh & Stavins, 2013; Liao, Shi & Wong, 2012), generate less 'pain of paying' (Prelec and Loewenstein, 1998; Raghurir and Srivastava, 2008), being considered a new technology and aesthetically innovative (Jonker 2007; Dahlberg et al., 2015).

(H₃): People have a less favorable attitude toward cash than towards electronic payment modes.

Based on the attitude regressions model outputs, we conclude that people have lower favorable attitude toward cash than towards electronic PMs. The attitude regression model

showed statistical significance ($p < .01$), and the coefficients of the PMs variables show higher favorable attitude towards credit card, debit card and digital payments than for cash. Therefore, H₃ was supported.

This result is in line with Ting, Yacob, Liew and Lau (2015) who showed that the attitude towards the electronic payments are positively predicted by perceived values as usefulness, ease of use, trust and safety. Based in our results of attitude, we can argue that people that have higher favorable attitude toward electronic payments might have lower favorable attitude to cash payments, as electronic payments are considered a directly substitute for cash (Trütsch, 2016), and digital payments (mobile payments and digital wallets) are perceived being more convenient and ease to use than the remaining PMs (Mallat 2007).

Control Variables

As for the control variables considered in the regression models, the variable PRICE (price of the product) indicated statistical significance ($p < .10$) for the Cognitive and Affective regressions model and show that high product price has a positive influence in the perception of the cognitive and affective values when compared to low price product. Based on this results and on the fact that product price affects PMs choice in prevalence of cash payments for small price products and services (Hayashi and Klee, 2003), we can discuss that on high price products purchase might trend consumers to choose PMs with high cognitive and affective perceived values, such as electronic payments.

The control variable region showed statistical significance ($p < .05$ and $p < .10$) for the SOC, NOV, AES and Affective regressions model, showing that those values are higher perceived in the NORTH region than SOUTH and SOUTHEAST regions, but they are equally perceived between NORTH, MIDWEST and NORTHEAST regions. Based on that we can argue that affective values are more strongly perceived in the less economically developed regions of Brazil (North, Northeast and Midwest - PNUD : IPEA : FJP, 2016).

6. CONCLUSIONS, LIMITATIONS AND FUTURE RESEARCH

6.1. Conclusions

The starting point and main motivation of our study was to show that while there is a lot of ongoing research on payments, few studies (Thomas et al., 2011; Khan et al., 2015) have acknowledged the psychological, or the mental and emotional experiences that PM

generates in consumers, or that have attempted to differentiate between these modes. Our aim was to examine the relevance of consumer perceived value when it comes to deciding on PM, i.e., whether to pay with cash, debit card, credit card or digital PMs (mobile and digital wallet).

Drawing on the cognitive-affective behavior paradigm and consumer value behavior theories, the results of our study support our skepticism: different PMs are perceived differently in terms of value. Based on the multi-linear regression results and descriptive analysis, we found that the cognitive perceived values are predominantly higher than the affective perceived value. More specifically, for cash payment both the perceived money management value and the perceived functional value (i.e., cognitive value) are lower than for the other PMs. In the case of novelty value and aesthetic value, digital payments are perceived as more valuable than the other PMs. Digital payments were also found holding the higher perceived affective value. Emotional perceived value was found being lower for cash than for debit cards and digital payments, and equally perceived between cash and credit card. Finally, social perceived value seems to share the same consumer value perception for all the payments modes. Across all PMs, we identified that functional value is perceived being the highest perceived value, and the social value is perceived being the lowest one. The importance of functional value is related to the perception of the payments attributes in fulfill the consumer necessity of convenience (flexibility and portability), availability (well-accepted) or ease of use.

Overall, we can now state with more confidence that PMs are cognitive-affective perceived differently and the importance of those values vary across the PMs perception. While some PMs presented common perceptions of weakness (lower perceived value) or strength (higher perceived value) we can thus not assume that there are “success factors” and “determinants” for the perceived values of PMs in general. However, we can assume that consumers are strongly willing to use PMs that bring them convenience, availability and easy to use, since functional values were overall perceived as the highest for all PMs. They also look for having a seamless purchase experience, since digital payments were identified as having higher perceived affective value amongst all PMs.

Finally, this study contributes to the literature by improving the previously developed PM scale on the perception of PMs (Khan et al., 2015), in two ways: it further builds on well-established models of consumer behavior - Cognitive-Affective Behavioral Paradigm and the Consumption Value theory -, and it also considers all existing PMs, namely digital

payments which are the most recent payments modes that have been introduced in the payments industry. Additionally, the market can benefit from this study, as it allows to better understand the expected payment consumer behavior: it grasps how consumers perceive the value underlying specific payments modes, which then affects their choice of PMs and spending behavior. This can provide firms with insights on the best strategy in terms of offered consumer payment experience for different types of purchases and for insights for the payments industry to build new payments modes. This can result in financial benefits.

6.2. Limitations and Future Research

As in all research studies, our conceptualization and research design choices involve limitations. One first factor is the context of the payment situation, which could influence how consumers choose to pay and how much they are willing to pay. This could vary along multiple dimensions, including the time of the day (when) and the location where the payment is carried out (where - street, event, store, restaurant, home) (Runnemark, Hedman & Xiao, 2015). While in our study we considered the product price purchase situation in line with previous studies, it limits the findings to this specific contextual situations. A second factor are the different payments scenarios that the consumer might face with a specific PM, related to the underlying technology used to access that PM (near field communication – NFC, QR codes, etc.), which might change the way PMs are perceived. We did not control for this issue.

Ample opportunities exist for future research in the area of PM perceptions. Future research should consider the innovative use of social media applications to perform person-to-person (P2P) transactions and purchase goods and services, since P2P payments transactions are one of the new trends in the payment industry (World Payments Report, 2017). The use of new modes of payments are inevitable, specially oriented to the unbanked population, which want to make their transactions without having a bank account or a credit card, and most of time using their mobile phones or other wearables. As those new payment schemes present convenience to consumers, they also potentially result in further perceptual distancing between payment and consumption. It is necessary to ascertain people's perceptions of those new payments modes, their use of such payments, and their associated behaviors. Another avenue for extending the present research is to examine perceptions of prepaid cards (Khan et al., 2015) – although the prepaid card represents owned money similar to a debit card, there may be a different awareness that the money is

'spent'. Also, there is an opportunity for extending this study to an experimental research design that compares the perceptions of each PM in a real online and in-store purchase scenario (Xu & Riedl, 2011).

Finally, it is reasonable to assume that a cashless PM will prevail for future payments (Arvidsson & Markendahl, 2014; Carton & Hedman, 2013; Hedman, 2012). Therefore, while the findings are particular to a specific population, changing money management and spending awareness are issues which deserve attention in future research. We hope that by providing a more accurate and widely applicable measurement of consumers' perceptions of PMs, we will stimulate more research in this area across a variety of different purchasing situations and contexts.

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